

WHAT IS CLAIMED IS:

1. A delivery system for a bifurcated intracorporeal device comprising:
an elongate shaft having a proximal section and a distal section with
the distal section comprising:

an elongate primary belt support member positioned to be
disposed within at least a portion of the bifurcated intracorporeal device;

at least one primary belt secured to the primary belt support
member configured to be circumferentially disposed about a bifurcated
intracorporeal device so to at least partially constrain the device;

a primary release member configured to engage and releasably
secure the primary belt in a constraining configuration;

at least one elongate secondary belt support member disposed
adjacent the elongate primary belt support member;

at least one secondary belt secured to the secondary belt
support member configured to be circumferentially disposed about a
bifurcated intracorporeal device so to at least partially constrain the device;
and

a secondary release member configured to engage and
releasably secure the secondary belt in a constraining configuration.

2. The delivery system of claim 1 wherein the primary belt support
member is an elongate tubular member and the bifurcated intracorporeal device is a
bifurcated endovascular graft in a constrained state.

3. The delivery system of claim 1 wherein the primary belt and secondary
belt each comprise a length of wire having a first end and a second end with each of said first
and second wire ends secured to the primary belt support member, and secondary belt support
member respectively.

4. The delivery system of claim 1 wherein one or both of the primary belt
and the secondary belt comprise first and second opposed ends and wherein the first opposed
end has a different cross-sectional area than the second opposed end.

5. The delivery system of claim 4 wherein each of the first and second
opposed ends form an end loop.

6. The delivery system of claim 3 wherein the wire comprises nickel titanium.

7. The delivery system of claim 1 wherein the release members comprise release wires moveably disposed within opposed looped ends of the respective belts.

5 8. The delivery system of claim 1 wherein the belts in the constraining configuration form a plane that is substantially orthogonal to a longitudinal axis of the elongate shaft.

9. The delivery system of claim 1 wherein at least two belts are configured to be releasable by a single release member.

10 10. The delivery system of claim 1 comprising a plurality of primary release members wherein the proximal ends of at least two of the primary release members are color-coded.

11. The delivery system of claim 1 comprising a plurality of primary release members wherein proximal ends of the primary release members are in a linear spatial
15 configuration at a proximal end of the delivery system that corresponds to a desired deployment sequence for a plurality of belts.

12. The delivery system of claim 11 wherein the plurality of primary release members comprise a distal primary release wire handle and a proximal primary release wire handle disposed in a nested configuration.

20 13. The delivery system of claim 1 wherein the primary release member comprises a branched release wire.

14. The delivery system of claim 1 further comprising a secondary belt support member housing secured to the primary belt support member wherein the secondary belt support member is configured to move axially within the housing and the housing and
25 secondary belt support member are configured to prevent relative rotational movement therebetween.

15. A delivery system for a bifurcated graft comprising:

an elongate shaft having a proximal section and a distal section with the distal section comprising:

a portion having disposed thereon the bifurcated graft, the graft having a main body portion, an ipsilateral leg and a contralateral leg;

an elongate primary belt support member disposed within the main body portion and ipsilateral leg;

at least one primary belt secured to the primary belt support member and circumferentially disposed about the bifurcated graft and which constrains at least a portion of the graft;

a primary release member which releasably secures the primary belt in the constraining configuration;

at least one secondary belt support member disposed adjacent the contralateral leg;

at least one secondary belt secured to the secondary belt support member and circumferentially disposed about the bifurcated graft and which constrains at least a portion of the graft; and

a secondary release member which releasably secures the secondary belt in the constraining configuration.

16. The delivery system of claim 15 additionally comprising a first proximal self-expanding member secured to a proximal end of the contralateral leg and a second proximal self-expanding member secured to a proximal end of the ipsilateral leg, and wherein the legs have a different length and the first and second proximal self-expanding members are axially offset from each other when the graft is in a constrained state within the delivery system.

17. The delivery system of claim 15 additionally comprising a first proximal self-expanding member secured to a proximal end of the contralateral leg and a second proximal self-expanding member secured to a proximal end of the ipsilateral leg and wherein the legs have substantially the same length and one of the legs is axially compressed or folded such that the first and second proximal self-expanding members are axially offset from each other when the graft is in a restrained state within the delivery system.

18. The delivery system of claim 15 wherein the primary belt constrains a distal self-expanding member disposed at a distal end of the bifurcated graft main body portion.

5 19. The delivery system of claim 16 wherein the distal self-expanding member is a tubular stent.

20. The delivery system of claim 17 wherein the stent comprises a circumferential groove configured to accept at least a portion of the primary belt.

10 21. The delivery system of claim 15 wherein the primary belt and the secondary belt comprise at least one length of wire having a first end and a second end and configured in a loop with each of said first and second wire ends secured to the primary belt support member and secondary belt support member, respectively.

22. The delivery system of claim 15 wherein the primary belt and secondary belt comprise at least one length of wire having opposed end loops having differing diameters.

15 23. The delivery system of claim 21 wherein the wire comprises nickel titanium.

24. The delivery system of claim 15 wherein the release members comprise release wires moveably disposed within opposed looped ends of the respective belts.

20 25. The delivery system of claim 15 wherein the belts in the constraining configuration form a plane that is substantially orthogonal to a longitudinal axis of the elongate shaft.

26. The delivery system of claim 15 wherein at least two primary belts are configured to be releasable by the same release member.

25 27. The delivery system of claim 15 wherein the primary belt support member comprises a guidewire tube.

28. The delivery system of claim 26 wherein the distal section further comprises an outer protective sheath disposed about the endovascular graft while the graft is in a constrained state.

29. The delivery system of claim 15 further comprising means for
5 shielding the ipsilateral leg from the contralateral leg.